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AUTHOR McDowell, Earl E.
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ABSTRACT

Although previous research has explored the differences between Personal Report of Communication Apprehension (PRCA) scores and Receiver Apprehension Test (RAT) scores, no studies have focused on the relationship between PRCA scores, RAT scores, and Telephone Apprehension Inventory (TAI) scores for the United States and Australia. A study investigating these relationships posed the following research questions: (1) What are the relationships between PRCA variables, RA and TA, for these two countries? (2) Will there be significant differences between the means of the two groups (college students from each country) in rating the four context variables of the PRCA variables, RA and TA? and (3) Will there be significant differences between the means of gender groups in rating the four context variables of the PRCA variables, RA and TA? Seventy-three students from Australia and 254 students from the United States participated in the study. All participants completed the PRCA-24, RAT and TAI. Results showed that significant positive correlations occurred between all PRCA-24 variables as well as a significant relationship between PRCA-24 and RAT for the composite group. The results also show that there are significant relationships between PRCA-Group and TAI and PRCA-Dyadic and TAI. An interpretation of the gender results indicates that males experience significantly more telephone apprehension. (Contains 16 tables of data and 21 references.) (TB)

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An Exploratory Study of PRCA-24 Variables, Receiver Apprehension (RA) and Telephone Apprehension (TA) for College Students from Australia and the United States

Earl E. McDowell
University of Minnesota
325 Haecker Hall
Department of Rhetoric
St. Paul, MN 55108

Speech Communication Association Convention

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ABSTRACT

This study was designed to determine the relationships among PRCA-24 variables, RAT, and TAI variables, to determine differences between gender groups on the apprehension variables, and to determine differences between country groups on these variables. The results indicate that significant positive relationships exist among PRCA-24 variables and between PRCA-Dyadic and TAI variables. Signifcant differences also occurred between gender groups in rating PRCA-Meeting amd TAI variables. Other differences are discussed in the paper.

For approximately the last 60 years communication apprehension has been investigated. Research by Payne and Richmond (1983) found that 876 published articles and convention papers on topics related to communication apprehension (CA). A survey of the communication journals and convention bulletins since 1983 reveals that hundreds of other studies have been completed on the communication apprehension. Numerous studies by McCroskey (1970; 1978; 1981; 1984) describe CA as "an individuals level of fear or anxiety associated with either real or anticipated communication with another person or persons." Approximately 25 percent of the adult population can be categorized as having high or moderate oral communication apprehension.

Wheeless (1975) and Preiss and Kerssen (1990) indicate that receiver apprehension (RA) is probably the most general form of anxiety. People who experience high receiver apprehension are fearful about the decoding process of communiation. Booth-Butterfield, Heare, and Booth-Butterfield (1991) indicate that individuals with high receiver apprehension worry that they will not be able to adequately comprehend or process information presented to them. Approximately 15 percent of the adult population suffer from high or moderate receiver apprehension.

In their first study on telephone apprehension (TA), Lewis and Reinsch (1982), collected data from 58 business communication students, 52 high school teachers of business communication and 16 college professors, and they found no significant correlation with Porter's Personal Report of Communication Apprehension (PRCA). They also found non-siginificant correlation between TA, PRCA-20, PRCA-24, and writing apprehension (WA).

Steele and Reinsch (1984) reported significant positive correlations between TA and PRCA-13 (r=.27). They concluded that "Persons who are apprehensive about receiving messages or about oral communication should experience some telephone apprehension since telephone communication requires listening and speaking. Steele and Reinsch (1984) replicated their 1983 study. The results indicate that 14 percent of the subjects were high apprehensives with a grand mean of 42.96 and standard deviation of 11.52. Males scores were significantly higher than females ($p < .05$).

Previous research by Wurtzelk and Turner (1977) concluded that 4 percent of an urban population experience significant telephone apprehension and that further 12 percent experience some degree of apprehension. If these levels are representative of the USA, then, with a projected population of 250 million, approximately

10 million people would be classifed as experiencing significant telephone apprehension and 30 million would be classified as experiencing moderate telephone apprehension.

This study focuses on differences among college students from Australia and the United States in rating CA, RA, and TA. Previous research by Klopf and Cambra (1979) at the University of Hawaii revealed that United States students scored significantly higher on the PRCA than Australian Students. In contrast McDowell, McDowell, Pullman and Lindbergs (1981) concluded that no siginificant differences existed between college students from Australia and United States as approximately 20 percent of students from each country would be classified as high apprehensives. Moreover, Richmond and Andriate (1984) stated: "While the data are sparce, and the representativeness of some samples is questionable, it appears that the incidence of CA in English speaking cultures differ little from the incidence in the US. . . . " More research is need to determine the accuracy of this statement.

This exploratory study focuses of the differences between college students from Australia and the United States. Although previous research has explored the differences between PRCA scores and Receiver Apprehension Test (RAT) scores, no students have

focused on the relationships between PRCA scores, RAT scores, and Telephone Apprehension Inventory (TAI) scores for each country and across countries, as well as differences between gender groups, and country groups.

RESEARCH QUESTIONS

1. What are the relationships among PRCA variables, RA, and TA for each country and across countries?
2. Will there be significant differences between of the means country groups (college students from United States and Australia) in rating the four context variables of the PRCA variables, RA, and TA?
3. Will there be significant differences between the means of gender groups (male and female) in rating the four context variables of the PRCA variables, RA, and TA?

PROCEDURES

Two samples of college students participated in the study. These included students from University of Technology, Sydney Australia (N=73--21 males and 52 females) and students from a midwestern university, United States (N=254--108 males and 146 females). All participants completed the PRCA-24, RAT and TAI.

Instruments

A. *Personal Report of Communication Apprehension*

The PRCA-24 instrument consists of four separate contexts: interpersonal/dyadic, public speaking, group communication and meetings (McCroskey, 1981). There are six items for each communication context. The instrument has strong face validity and empirical validity. Factor analysis was used to confirm expected dimensionality rather than to define dimensionality. The internal consistency was a coefficient of .92.

B. *Receiver Apprehension Test*

Wheeless (1975) developed the Receiver Apprehension Test (RAT). He reworded 45-items from the PRCA, PRCS, and Test Anxiety Inventory which focused on fear of misinterpreting, decoding messages, and psychologically adjusting to messages. Wheeless also utilized factor analysis with varimax rotation to determine the unidimensional items. Twenty items were unidimensional. The items include listening to speakers present instructions, ideas and new information, watching television and dyadic and group communication situations. The RAT is reliable and valid.

C. *Telephone Apprehension Measure*

Steele and Reinsch (1983) developed the Telephone

Apprehension Inventory (TAI). They indicate that telephone apprehension refers to the idea that a person might be uncomfortable about communicating when using the telephone. TA can be defined as "anxiety or fear associated with the anticipated or actual use of the telephone as a communication channel." Initially, 92 Likert-type items were developed from previous scales (Beatty, Kruger & Springhorn, 1976; Burgoon, 1976; Fielding, 1987; Gilkinson, 1942; Lewis & Reinsch, 1982; McCroskey, 1970; Mortensen, Lustig & Arntson, 1977; Watson & Friend, 1960; Wheeless, 1975). Some items were generated by Steele and Reinsch. A pretest was completed and 62 items were eliminated. The remaining 30 items were revised and, in some cases, reversed in polarity. The TAI was administered to 371 college students from basic speech classes. Responses were analyzed for reliability (r= .938) with a mean of 42.95 and a standard deviation of 11.52 and factor analysis (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975). Based on the results the TAI is a 20-item instrument and is considered reliable and valid.

RESULTS

The results, reported in Table 2, indicate that significant posiitve correlations occurred between all PRCA-24 variables ($p < .01$) as well as a significant relationship between PRCA-24 and RAT

($p < .05$) for the compoite group. Unlike previous research a significant relationship occurred between PRCA-G and TAI and PRCA-D and TAI ($p < .05$). Likewise, significant correlations occurred between PRCA variables for both the Australian and United States groups (see Tables 3 and 4). The highest ($p < .01$) occurred between PRCA-Dyadic and TAI.

The means and ANOVA results for gender groups are reported in Table 5 through Table 10. Significant differences occurred between males and females in rating PRCA-PS, in rating RAT, and in rating TAI (males had significantly higher scores). The largest mean differences occurred between males (X=42.1) and females (38.1) on the TAI.

The results, reported in Table 11, indicate that significant differences occurred between United States and Australian students in rating PRCA-PS variable. A marginal differences occurred on the PRCA-D variable. In both cases USA students rated the variables higher (see Tables 11 through 16 for the ANOVA results).

DISCUSSION

Overall the results of this study indicate that significant positive relationships exist among PRCA variables and between PRCA variables and the RAT variable. These finding support previous

research and contribute little to the communication field--although more research should be completed among English speaking countries.

The results also reveal that there are significant relationships between PRCA-Group and TAI and PRCA-Dyadic and TAI. These findings do not support previous research. The finding seem to indicate that subjects who experience telephone apprehension also experience apprehension when participating in a face-to-face discussion and group communication or interpersonal communication situations.

An interpretation of the gender results indicates that males experience significantly more telephone apprehension. In fact, when using one standard deviation above the grand mean as a method to classify subjects into the high TAI subject group, 23 percent of the males are apprehension, while only 11 percent of females are apprehensive.

Other results also show that males are more apprehensive when participating in a meeting and listening. That is, 25 percent of males experience listening apprehension, while17 percent of females experience it. In contrast, 21 percent of females experience apprehension when participating in meeting, while 16 percent of

males experience apprehension.

Overall country in not a good discriminating variable as only significant difference occurred for the PRCA-PS variable. In addition, the high within group variance for all other variables seem to indicate only marginial differences between students from the two countries. This, however, does not mean that more research should not be done. College students from Australia and the United States might not be representative of the two English speaking countries. In addition, males are quite different as females make up 71 percent of the Australian sample, while females make up 57 percent of the United States sample. More importantly, the sample from Australia is only 30 percent of the United States sample.

Research should continue on telephone apprehension and other types of technology used to facilitate communication. Questions generated by Fielding (1987) might be addressed in future research:

1. Will there be a high, positive and significant correlation between levels of telephone apprehension and levels of trait-like communication apprehension?
2. Will there be a high, negative and significant correlation between levels of telephone apprehension and level of telephone apprehension and levels of social desirability need?

3. Will there be a high, negative and significant correaltion between levels of telephone apprehension and levels of self-esteem?

4. Will there be a high and significant correlation between levels of telephone apprehension and the respondent's social class?

5. Will there be a high, negative and significant correlation between levels of telephone apprehension and the respondent's family size?

Other research question might focus on different age groups. That is:

Will older respondents experience higher levels of telephone apprehension than younger respondents?

Overall, the statements made by Steele and Reinsch (1983) still seem to be valid. That is, "current evidence of telephone apprehension is primarily anecdotal an impressionistic." Telephone apprehension, as well as studies on other forms of human communication technology, is worthy of scholarly study.

Table 1

Telephone Apprehension Scale

Likert Scale
1. I look forward to telephone conversations.
2. I feel it is difficult to converse over the phone.
3. I avoid speaking on the telephone whenever possible.
4. I find speaking on the telephone pleasant.
5. I take prode in my speaking ability over the phone.
6. It is easy for me to express myself on the telephone.
7. I thoroughly enjoy speaking on the telephone.
8. I feel rushed and pushed when I use the telephone.
9. When I have to to talk on the phone, I grow nervous and uncomfortable.
10. I hurry to finish the conversation when talking on the telephone.
11. I feel misunderstood when I use the telephone.
12. I have problems expressing myself over the telephone.
13. I do not like to talk on the phone.
14. I feel inhibited using the phone.
15. I feel relaxed and comfortable when speaking on the telephone.
16. I dread speaking on the phone.
17. I feel calm and comfortable using the telephone.
18. I do not feel comfortable using the telephone.
19. I have feelings of frustration after most phone calls.
20. I avoid using the phone.

Table 2
Composite Correlations for Australian and USA Groups on PRCA-Variables, RAT, and TAI

Correlation matrix

	PRCA-G	PRCA-M	PRCA-D	PRCA-PS	RAT	TAI
PRCA-G	1					
PRCA-M	.737	1				
PRCA-D	.642	.53	1			
PRCA-PS	.481	.557	.408	1		
RAT	.482	.441	.568	.277	1	
TAI	.232	.137	.337	.187	.39	1

2

Table 3
Correlations for the Australian Group on PRCA-Variables, RAT, and TAI Variables

Correlation matrix

	PRCA-G	PRCA-M	PRCA-D	PRCA-PS	RAT	TAI
PRCA-G	1					
PRCA-M	.772	1				
PRCA-D	.562	.446	1			
PRCA-PS	.652	.725	.485	1		
RAT	.396	.322	.412	.395	1	
TAI	.088	.08	.236	.273	.233	1

2

Table 4
Correlations for the USA Group on PRCA Variables, RAT, and TAI Variables

Correlation matrix

	PRCA-G	PRCA-M	PRCA-D	PRCA-PS	RAT	TAI
PRCA-G	1					
PRCA-M	.73	1				
PRCA-D	.673	.58	1			
PRCA-PS	.426	.492	.388	1		
RAT	.499	.494	.589	.272	1	
TAI	.267	.151	.352	.171	.468	1

2

r=.19; ($p < .05$)
r=.23 ($p < .02$)
r=.25 ($p < .01$)

Table 5

One Factor ANOVA X_1: Gender Y_1: PRCA-PS

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	35.972	35.972	1.262
Within groups	324	9235.982	28.506	p = .2621
Total	325	9271.954		

Model II estimate of between component variance = 7.465

1

Table 6

One Factor ANOVA X_1: Gender Y_1: PRCA-D

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	8.635	8.635	.458
Within groups	324	6106.899	18.848	p = .499
Total	325	6115.534		

Model II estimate of between component variance = -10.213

1

Table 7

One Factor ANOVA X_1: Gender Y_1: PRCA-M

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	131.496	131.496	4.711
Within groups	324	9044.529	27.915	p = .0307
Total	325	9176.025		

Model II estimate of between component variance = 103.581

1

Table 8

One Factor ANOVA X_1: Gender Y_1: PRCA-G

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	23.894	23.894	.964
Within groups	325	8052.809	24.778	p = .3268
Total	326	8076.703		

Model II estimate of between component variance = -.883

1

Table 9

One Factor ANOVA X_1: Gender Y_1: RAT

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	313.079	313.079	2.829
Within groups	332	36742.277	110.67	p = .0935
Total	333	37055.356		

Model II estimate of between component variance = 202.409

1

Table 10

One Factor ANOVA X_1: Gender Y_1: TAI

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	1300.454	1300.454	6.978
Within groups	334	62246.471	186.367	p = .0086
Total	335	63546.926		

Model II estimate of between component variance = 1114.087

1

Table 11

One Factor ANOVA X_1: country Y_1: PRCA-PS

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	127.309	127.309	4.511
Within groups	324	9144.645	28.224	p = .0344
Total	325	9271.954		

Model II estimate of between component variance = 99.085

1

Table 12

One Factor ANOVA X_1: country Y_1: PRCA-D

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	38.692	38.692	2.063
Within groups	324	6076.842	18.756	p = .1519
Total	325	6115.534		

Model II estimate of between component variance = 19.936

1

Table 13

One Factor ANOVA X_1: country Y_1: PRCA-M

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	1.8	1.8	.064
Within groups	324	9174.224	28.316	p = .8011
Total	325	9176.025		

Model II estimate of between component variance = -26.515

1

Table 14

One Factor ANOVA X_1: country Y_1: PRCA-G

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	1.548	1.548	.062
Within groups	325	8075.155	24.847	p = .803
Total	326	8076.703		

Model II estimate of between component variance = -23.298

1

Table 15

One Factor ANOVA X_1: country Y_1: RAT

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	27.845	27.845	.25
Within groups	332	37027.511	111.529	p = .6176
Total	333	37055.356		

Model II estimate of between component variance = -83.684

1

Table 16

One Factor ANOVA X_1: country Y_1: TAI

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	11.316	11.316	.059
Within groups	334	63535.609	190.226	p = .8075
Total	335	63546.926		

Model II estimate of between component variance = -178.91

1

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